

Liquid cyanidation of stainless chromium steels

S/137/62/000/006/147/163  
A057/A101

ment at temperatures from  $-80^{\circ}\text{C}$  to  $-100^{\circ}\text{C}$  and holding time 30 minutes; 3) tempering in oil at  $180^{\circ}\text{C}$  and holding time 2 hrs. The maximum values of hardness of the C layers were obtained after the  $1,050^{\circ}\text{C}$  hardening. Corrosion tests showed that cyanided steel Kh17N2 after hardening at  $1,050^{\circ}\text{C}$  does not corrode in distilled water during 2 months, while samples of Kh13 steel are insufficiently resistant to corrosion after this hardening. Parts of cyanided details which are not treated mechanically after cyanidation can be well protected from corrosion by electropolishing; steels with 13% carbon are insufficiently resistant against corrosion after cyanidation.

A. Babayeva

[Abstracter's note: Complete translation]

Card 2/2

ACC NR: AP6021709

(N)

SOURCE CODE: UR/0148/66/000/003/0153/0156

AUTHOR: Sumarokov, N. V.; Makarova, L. Ye.

31  
29  
B

ORG: Perm' Polytechnic Institute (Permskiy politekhnicheskii institut)

TITLE: Phase composition, structure and mechanism of formation of the cyanided layer on stainless chromium steels

SOURCE: IVUZ. Chernaya metallurgiya, no. 3, 1966, 153-156

TOPIC TAGS: stainless chromium steel, cyanidation, phase composition, carbide, nitride /  
/ Kh17N2 stainless chromium steel, 1Kh13 stainless chromium steel

ABSTRACT: This is a continuation of previous investigations (N. V. Sumarokov, Ye. N. Busalayeva. Sb. otraslovykh laboratoriy Permskogo SNKh (Mashinostroyeniye), 1961; and three other investigations) with the difference that it presents additional findings obtained by metallographic, radiographic and chemical examination of the cyanided layer on Kh17N2 and 1Kh13 stainless chromium steels. Thus, it is established that the cyanided layer contains a large number of excess carbides which segregate during nitrogen case-hardening; the outermost part of the layer includes a readily etchable "dark zone" which is free of excess carbides,

Card 1/2

UDC: 669.26:621.785.666:620.181:620.183

L 11012-66

ACC NR: AP6021709

apparently because of its high content of nitrogen. Phase analysis revealed that the cyaniding of Kh17N2 steel leads to the formation of not only chromium carbides but also concomitantly, chromium nitrides, i. e. the result is not a two-phase structure but a three-phase structure (solid solution, carbides, nitrides). The same may be said of the cyanided layer of Kh13 steel. As for the mechanism of formation of this layer, it is noteworthy that the zone where the carbide  $Cr_{23}C_6$  is replaced with the carbide  $Cr_7C_3$  advances toward the interior of the layer with increasing time of cyaniding; the depth of the carbide-free "dark zone" also increases. This indicates that increasing absorption of nitrogen by the layer leads to the decomposition of the previously formed carbides  $Cr_7C_3$  and the formation of the nitride  $CrN$ ; then the released carbon diffuses into the interior of the layer, where it forms new portions of carbide, thus increasing the depth of the layer. Orig. art. has: 4 figures.

SUB CODE: 11, 20, 13, 07/ SUBM DATE: 30Oct64/ ORIG REF: 008/

Card 2/2 hs

<sup>c</sup>  
SUMARKOV, O. M., MAL'CHENOK, V. O.  
<sup>h</sup>

"Possibilities in Applying Oscillatory Processes in Drilling"

(Abstracted from the Methods and Techniques of Geological Exploration)  
Sumarkov, O. M., Mal'chenok, V. O., 1977, 135 p. (Series: No. 6, 1977, 1)

MAL'CHENOK, V.O.; SUMAROKOV, O.M.

Prospects for developing the vibration drilling method. Trudy  
VITR no.1:389-412 '58. (MIRA 12:1)  
(Boring)

SUMAROKOV, O.M.; UTKIN, I.A.; MAL'CHENOK, V.O.

Combined vibrator for percussive rotary drilling. Biul.nauch.-  
tekhn.inform VIMS no.1:97-98 13. (MIRA 18:2)

SUMAROKOV, O.M.; UTKIN, I.A.; MAL'CHENOK, V.O.

Sectional magnetostriction vibrator for percussive-rotary drilling.  
Bul. nauch.-tekhn. inform. VIMS no.2:76-7. '63. (MIRA 18:2)

SUMAROKOV, T.Ye.

AKULININ, T.Ye.; SUMAROKOV, S.B. (Saratov)

Analysis of postoperative mortality in acute appendicitis. Klin.  
med. 32 no.11:69 M '54. (MLRA 8:1)

1. Iz kliniki gosspital'noy khirurgii (dir.-prof. A.N.Spiridonov)  
Saratovskogo meditsinskogo instituta.  
(APPENDICITIS, surgery  
postop. mortal.)



SUMAROKOV, S.B.

Purulent pancreatic pseudocyst. Sov.med. 20 no.6:74-75 '56.

(MIRA 9:9)

1. Iz gospi'tal'noy khirurgicheskoy kliniki pediatricheskogo fakul'teta (zav. dotsent B.A.Nikitin) Saratovskogo meditsinskogo instituta.

(PANCREAS, cysts,

purulent pseudocyst (Rus))

(CYSTS,

pancreas, purulent pseudocyst (Rus))

SUMAROKOV, S.B. . .

Case of early surgical treatment in extensive deep burn. Ortop.,  
travm. i protez. 21 no. 11:70-72 '60. (MIRA 14:4)  
(BURNS AND SCALDS)

KUZNETSOV, Yu.A.; MAKAROV, A.A.; MELENT'YEV, L.A.; MERENKOV, A.P.; NEKLASOV, A.S.; TSVETKOV, N.I.; KUZNETSOV, Yu.A.; MAKAROVA, A.S.; KARPOV, V.G.; MANSUROV, Yu.V.; SYROV, Yu.P.; KHAILEV, L.S.; TSVETKOVA, L.A.; VOYTSEKHOVSKAYA, G.V.; YEFIMOV, N.T.; LEVENTAL', G.B.; KHAHAYEV, V.A.; BELYAYEV, L.S.; GANN, A.Z.; KARTELEV, B.G.; KRUM, L.A.; LIOPO, T.N.; SVIRKUNOV, N.N.; DRUZHININ, I.P.; KONOVALENKO, Z.P.; KHAM'YANOVA, N.V.; SHVARTSBERG, A.I.; NIKONOV, A.P.; STARIKOV, L.A.; POFYRIN, L.S.; PSHENICHNOV, N.N.; TROSHINA, G.M.; CHEL'TSOV, M.B.; SVETLOV, K.S.; SUMAROKOV, S.V.; TAKAYSHVILI, M.K.; TOLMACHEVA, N.I.; KHASILEV, V.Ya.; KOSHELEV, A.A.; KUDINOVA, L.I., red.

[Methods for using electronic computers in the optimization of power engineering calculations] Metody primeneniia elektronno-vychislitel'nykh mashin pri optimizatsii energeticheskikh raschetov. Moskva, Nauka, 1964. 318 p.  
(MIRA 17:11)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Energeticheskii institut. 2. Chlen-korrespondent AN SSSR (for Melent'yev).

SUMAROKOV, V. A.

Water

Reports of the State Institute of Hydrology. Met. i gidrol. No. 6, 1948.

9. Monthly List of Russian Accessions, Library of Congress, November <sup>2</sup>19~~53~~, Uncl.

SUMAROKOV, V.A. (Chkalov)

Reservoirs, dams and protecting tracks from washouts. Put' i put.  
khoz. no.3:49 Mr '57. (MIRA 10:5)

1. Nachal'nik otдела inzhenernykh sooruzheniy sluzhby puti  
Orenburgskoy dorogi.  
(Railroads--Track)

SUMAROKOV, V.A., inzh.

Prevent washouts of culverts and bridges. Put' i put. khoz. no.4:7-9  
Ap '58. (MIRA 11:4)  
(Railroad bridges) (Culverts) (Flood control)

SUMAROKOV, V.A.

Culverts constructed without bases on the Orenburg railroad.  
Put' i put.khoz. no.1:34 Ja '59. (MIRA 12:2)

1. Nachal'nik otдела inzhenernykh sooruzheniy, g.Orenburg.  
(Orenburg Province--Culverts)

SUMAROKOV, V.A., inzh.

Water tanks near the roadbed. Transp.stroi. 11 no.4:48-49 Ap '61.  
(MIRA 14:5)

(Railroads—Water supply)



FODGORNYY, I.M.; SUMAROKHOV, V.N.

[Injection of plasma clots into a magnetic trap with a field growing stronger toward the periphery] Inzhetsiia  
sgustkov plazmy v magnitnoi lovushku s polem, vo-  
zrastaiushchim k periferii. Moskva, In-t atomnoi energii  
AN SSSR, 1960. 14 p. (MIRA 16:12)  
(Magnetic fields) (Plasma (Ionized gases))

S/030/60/000/011/024/026  
B021/B056

AUTHOR: Sumarokov, V. N.

TITLE: Theoretical and Applied Magnetohydrodynamics

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, No. 11, pp. 125-127

TEXT: The second conference on magnetohydrodynamics took place at Riga from June 27 to July 2 1960. More than 100 lectures on theoretical problems of magnetohydrodynamics, theoretical and experimental problems of the physics of plasmas as well as on problems of applied magnetohydrodynamics were delivered. The following reports were given: S. A. Kaplan: "On the History and Formation and Development of Magnetohydrodynamics"; D. A. Frank-Kamenetskiy: "The Properties of the Ionized Gas"; K. P. Stanyukovich: characterized problems of the relativity-magnetogas dynamics; S. I. Syrovatskiy: on shock waves in magnetohydrodynamics; A. G. Frank: on the papers of a group of authors on problems of the reflection and refraction of shock waves in magnetohydrodynamics; Yu. M. Volkov, L. I. Dorman, and Yu. M. Mikhaylov spoke about "Experiments With the Generation of the Magnetic Field in Metals and the Problem of the Formation of the

Card 1/3

Theoretical and Applied Magnetohydrodynamics

S/030/60/000/011/024/026  
B021/B056

Geomagnetic Field". A. I. Murozov and L. S. Solov'yev spoke about the kinetic investigation of the structure of the plasma boundary in the magnetic field; V. N. Tsytovich: "On the Solution of the Problem of the Collision of Conductive Gas Masses"; L. I. Rudakov: "On Oscillations of Heterogeneous Plasmas"; I. M. Podgorny and V. N. Sumarokov spoke about the results of injecting accelerated plasma clusters in the magnetic field; M. D. Borisov and his collaborators spoke about the conductivity of the plasma of the rectilinear pinch; L. V. Dubovoy spoke about the experimental determination of the plasma conductivity in strong electric fields; M. N. Vasil'yev and E. M. Reykhrudel' spoke about the kinetics of electrons; D. V. Orlinskiy: "The Investigation of the Shock Wave"; I. F. Kharchenko and Ya. B. Faynberg dwelt upon problems of the passage of an electron beam through the plasma; L. Ya. Ustimenko and Ye. I. Yantorskiy: "The Theory of a Synchronous Magnetogas Dynamic Machine"; L. M. Dronnik: "The Circular Diagram of an Asynchronous Magnetogasdynamic Generator". In the section for applied magnetohydrodynamics, the major part of the lectures were delivered by collaborators of the Institut fiziki Akademii nauk Latvyskoy SSR (Institute of Physics of the Academy of Sciences Latvyskaya SSR) I. M. Kirko and A. E. Mikhel'son reported on the problem

Card 2/3

Theoretical and Applied Magnetohydrodynamics

S/030/60/000/011/024/026  
B021/B056

of melting without crucibles. The conference contributed towards extending the outlook of the participants and has consolidated contact between research workers.

✓

Card 3/3

20455

S/056/61/040/002/008/047

B113/B214

26.2212  
26.2321

AUTHORS: Luk'yanov, S. Yu., Podgornyy, I. M., Sumarokov, V. N.

TITLE: Confinement of a plasma in traps with a magnetic field increasing toward the periphery

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 2, 1961, 448-451

TEXT: This work represents a continuation of an earlier work (c.f. J. Nuclear Energy, Part C, 1, 236, 1960). Also in this case, a coaxial electrodynamic injector which created accelerated hydrogen clusters, was used for filling the trap with plasma. The plasma parameters in the trap of the accelerated clusters were measured, for which purpose a vacuum chamber of stainless steel was employed; its height was 100 cm, and its diameter 21 cm. The magnetic field of 1500 oe was generated by two solenoids in the circuit of the injector. Langmuir probes were used for measuring the plasma parameters. As is seen from Fig. 1, in the region of the trap there exists a plasma long after switching off the discharge current ( $C = 2.5 \mu F$ ,  $V = 3 - 11$  kv) in the injector circuit. The confine-

Card 1/7

2455

S/056/61/040/002/008/047

B113/B214

Confinement of a plasma in

ment time is about  $40 \mu\text{sec}$ . Probe measurements showed that the density of the charged particles in the trap increases with increasing potential of the injector. This is inferred from Fig. 2, in which the ion saturation current  $J$  on the probe is shown as a function of the injector potential. Assuming that the temperature of the charged particles remains unchanged, the saturation current is proportional to the ion concentration. Measurements at different injector potentials showed that the electron temperature remained unchanged in both cases. On switching off the magnetic trap no accumulation of the plasma was observed in the vacuum chamber (Fig. 3). A comparison of Figs. 1 and 3 shows that a confinement of the plasma takes place within a certain time. To observe the different stages of plasma formation in the trap, ultrahigh-speed photography was applied. To observe the processes better, a vacuum chamber made of glass instead of steel was used. The magnetic trap used here is shown schematically in Fig. 4 (field = 6000 oe, duration of a field pulse =  $2000 \mu\text{sec}$ ). It was found that after the end of injection, the plasma does not leave the trap immediately. Now and then the plasma exhibited an abnormal behavior. In this case, the lifetime of the plasma was much shorter than that in the case represented in Fig. 5. It is not

Card 2, 7

Confinement of a plasma in...

20455  
S/056/61/040/002/008/047  
B113/3214

yet clear, however, whether the observed abnormal behavior of the plasma is a consequence of a macroscopic instability or is connected with the method of filling the trap with plasma. There are 6 figures and 5 references: 3 Soviet-bloc and 2 non-Soviet-bloc.

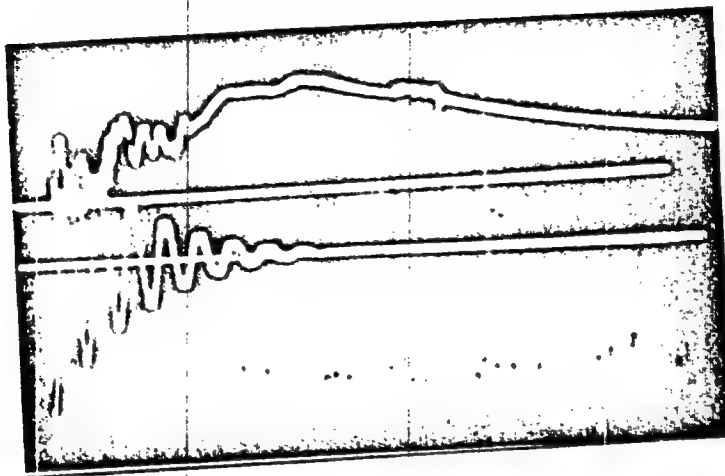
SUBMITTED: August 24, 1960

Card 3/7

Confinement of a plasma in...

20155  
S/056/61/040/002/008/047  
B113/B214

Fig.1



Card 4/7



Confinement of a plasma in...

20455  
S/056/61/040/002/008/047  
B113/B214

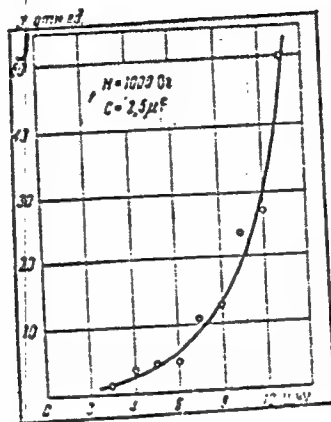


Fig. 2

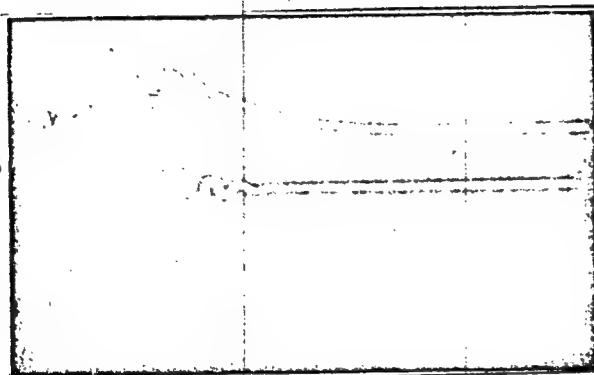
Card 5/7

Confinement of a plasma in...

20155  
S/056/61/040/002/008/047  
B113/B214

X

Fig. 3

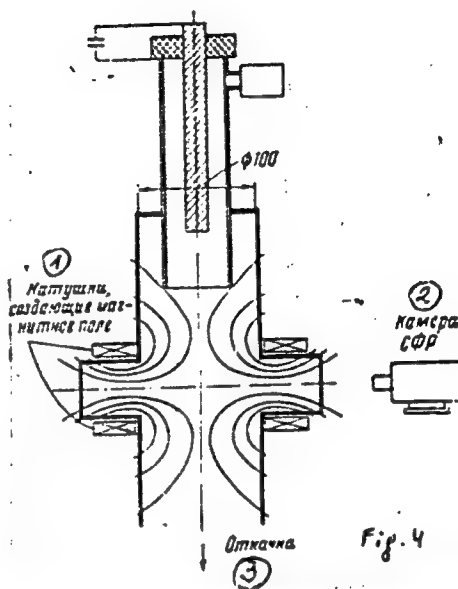


Card 6/7

Confinement of a plasma in...

Legend to Fig. 4: Scheme of the magnetic trap; 1) coils producing the magnetic field, 2) high-speed photographic camera, 3) evacuation.

Fig. 4



Card 7/7

ACCESSION NR: AP4035002

S/0057/64/034/005/0833/0840

AUTHOR: Podgorny<sup>y</sup>, I.M.; Sumarokov, V.N.

TITLE: Investigation of the behavior of plasma in a magnetic trap with an axial current

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.5, 1964, 833-840

TOPIC TAGS: plasma compression, magnetic trap, biconical cusp, axial current  
biconical cusp, ion temperature, ionized carbon line, NIMFA-1 machine

ABSTRACT: This paper reports experiments on the confinement of plasma in a biconical cusp with an auxiliary azimuthal magnetic field produced by an axial current. The purpose of the auxiliary field was to minimize loss of adiabaticity and consequent escape of plasma through the annular cusp and to increase compression efficiency. The experiments were performed with the NIMFA-1 installation. The biconical cusp was formed in a 20-cm-diameter, stainless-steel tube by discharge of a capacitor through two coils separated by approximately 15 cm. The discharge time was 6 milliseo, and the field reached 5000 Oe in the region of the cusp. The auxiliary field was produced by discharge of a 1500-microfarad capacitor through an axial rod.

Card 1/3

ACCESSION NR: AP4035692

The rod [diameter not given] was insulated with polyethelene and was enclosed in a grounded stainless-steel tube. The discharge time was 300 microsec and the current reached a maximum of 100 kA. Bursts of hydrogen plasma from a coaxial cylindrical gun were injected along the axial rod at a time when the current in the rod was only 10% of its maximum value. A diaphragm with an annular opening (radii 13 and 15 mm) permitted entrance of the plasma and minimized entrance of neutral atoms. Application of the increasing axial current resulted in a decrease of the confinement time by a factor of 3 to 5 but also in a considerable increase of the temperature attained. Without the axial current, the spectrum consisted of neutral hydrogen and singly ionized carbon lines. The intensity of these lines decayed with a time constant of 40 to 60 microsec. When the axial current was present, the most prominent line was C III 4647 Å. This reached its maximum intensity after the C II 4267 Å line had nearly disappeared, and then it faded rapidly. The C IV 2530 Å line was not observed. That the failure to observe the C IV line was due to rapid loss of plasma was confirmed by bolometer measurements of plasma loss through the cusp. From the spectrum data, the electron temperature was estimated to reach 20 to 30 ev. The ion temperature, in the absence of the axial current, was found by probe measurements to be 10 ev. Calorimetric measurements showed that the ion temperature reached 20 to 25 ev when the axial current was present. Orig. art. has: 3 figures and 3 formulas.

Card 2/3

ACCESSION NR: AP403569.

ASSOCIATION: none

SUBMITTED: 10Jun63

SUB CODE: ME, EM

ATD PRESS: 3080

NR REF SOV: 003

ENCL: 00

OTHER: 004

Card 3/3

ACC NR: AP6036031

SOURCE CODE: UR/0057/66/036/011/1976/1983

AUTHOR: Koval'skiy, N. G.; Sumarokov, V. N.

ORG: none

TITLE: Investigation of plasma in a magnetic trap having opposed magnetic fields

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 11, 1966, 1976-1983

TOPIC TAGS: plasma magnetic field, plasma velocity, plasma, magnetic field, magnetic trap, plasma lifetime, collision ionized plasma, hydrogen plasma, magnetic field plasma effect, plasma physics, plasma research, plasma structure

ABSTRACT: The behavior of plasma in a trap having opposed fields was studied for a case of when the typical time period for collision processes in (ion-ion coulomb collisions and proton charge exchanges by neutral hydrogen atoms) is only a few milliseconds. A plasma bunch was injected into the trap through a ring diaphragm set on the axis of the system in the region of the magnetic gap.

Card 1/2

UDC: 533.9

ACC NR: AP6036031

The velocity of the bunch was  $1-2 \cdot 10^7$  cm/sec, and the total energy of the plasma injected into the trap was 0.3 j. Experiments showed that at the initial moment the plasma fills the central region of the trap near the point of zero magnetic field intensity. At a field intensity of 3000 oe, the concentration of plasma was  $\sim 3 \cdot 10^{11}$  cm<sup>-3</sup>. As a result of special efforts the concentration of impurity atoms and neutral hydrogen in the chamber did not exceed  $5 \cdot 10^9$  cm<sup>-3</sup>. It is shown that protons leave the trap in the region of the magnetic ring gap with an average transverse energy of  $\sim 50$  ev. This demonstrates the effectiveness of the conversion of directed plasma bunch energy into a Larmor ion rotation in interaction with opposed magnetic fields. The containment time of particles with a given average energy exceeds by one order the time of flight through the region affected by the magnetic field. Plasma lifetime was found to be strongly affected by the intensity of the magnetic field. Orig. art. has: 2 tables and 4 figures. [SP]  
[Authors' abstract]

SUB CODE: 20/SUBM DATE: 04Dec65/ORIG REF: 002/OTH REF: 006/

Card 2/2



C2

10

Alkaline earth compounds of guaiacol and *p*-cresol  
V. P. Buzanov, *Leningradskaya Prom. 2*, No. 3,  
34-6(1953).—Five g. of a vacuum-dried, guaiacol was  
mixed with 140 cc. of a soln. contg. about 6.4 g. Ba(OH)<sub>2</sub> ·  
8H<sub>2</sub>O. The mixt. was left overnight, whereupon some  
crystals apptd. After a no. of courses, in some in a  
vessel with a connection with the air through a tube  
charged with soda-lime, 100% of BaC<sub>10</sub>H<sub>6</sub>O<sub>4</sub> was ob-  
tained. This Ba guaiacolate was insol. in the usual sol-  
vents, while in hot H<sub>2</sub>O it was sol., being partly hydrolyzed  
according to the equation BaC<sub>10</sub>H<sub>6</sub>O<sub>4</sub> + 2H<sub>2</sub>O ⇌ Ba(OH)<sub>2</sub> ·  
8H<sub>2</sub>O + 2C<sub>10</sub>H<sub>8</sub>O<sub>2</sub>. Thus H<sub>2</sub>O at 20° dissolves 4.4 parts of BaC<sub>10</sub>H<sub>6</sub>O<sub>4</sub>  
per 100. CaC<sub>10</sub>H<sub>6</sub>O<sub>4</sub> prepd. in the above manner  
with Ca(OH)<sub>2</sub>, gave a theoretical yield of a product 1  
part of which was sol. in 100 parts of H<sub>2</sub>O of 20°. Ba *p*-  
cresolate was obtained from 2 g. *p*-cresol and 4.6 g.  
Ba(OH)<sub>2</sub> · 8H<sub>2</sub>O in 100 g. distd. and boiled H<sub>2</sub>O in 93.4%  
yield. Repeated crystn. was used. 11.8 parts of the  
product dissolved in 100 parts H<sub>2</sub>O of 20°. Ca *p*-cresolate  
was prepd. from 2.284 g. *p*-cresol in 100 cc. H<sub>2</sub>O and  
9.94 melted *p*-cresol, 11 being passed through for 40 min.  
The crystn. of the final product was effected in the usual  
manner, giving a final yield of 93.4% (only 2.5 parts in  
100 parts H<sub>2</sub>O at 20°). A. A. Brethling

ASAC 554 METALLURGICAL LITERATURE CLASSIFICATION

RECEIVED AND PROPERTIES

Separating guaiacol from wood creosote by means of calcium oxide. V. P. Samarokov. *Lesokhimiya* (Prom. 2, No. 3, 36-9(1933)).—Because of the lower water soly. of Ca guaiacolate in comparison with that of Ba guaiacolate the former can be applied for the sepn. of the guaiacol from wood creosote. The use of CaO for the sepn. of guaiacol is more in accordance with the ratio of the basic creosote groups than the application of BaO. The creosote from birch tar is lower in guaiacol than that from herry tar. A. A. Borhtlinsk

ASU-55A DETAILING LITERATURE CLASSIFICATION

ASU-55A DETAILING LITERATURE CLASSIFICATION

<p>13c</p> <p>8-17-</p> <p>SEPARATION OF WOOD CREOSOTE INTO ITS CONSTITUENTS.  V. P. Samarsky and V. D. Ugrumov (Leningrad. Prom.,  1935, 4, No. 1, 5-6, No. 2, 3-6).</p> <p>The wood creosote is dissolved in Et<sub>2</sub>O and treated  first with H-NaHCO<sub>3</sub> to remove acids and then with 10  portions of NaOH. The Et<sub>2</sub>O retains phenols and neutral  oils which do not react with NaOH.</p> <p>Ch. Abs. (e)</p>	
<p>ASB-514 METALLURGICAL LITERATURE CLASSIFICATION</p>	
<p>10000 10000</p>	<p>10000 10000</p>

**Converting liquid distillates obtained in the dry distillation of wood by the Bruster-Badger method in the Asha wood chemistry plant.** I. V. P. Sumarokov, *Leningrad. Prom.*, 4, No. 6, 21-9; Nov. 7-19-17(1955). A detailed description is given of the Bruster-Badger wood alk. rectifying app. as well as of its operation, and the properties and yields of various products are tabulated. It is concluded that on lowering the raw alk. strength from 80-83% to 74-80% Trafolex the losses of alk. could be lowered by 23%, while the acid losses increased by 9 kg. (per 24 hrs.) caked on a 100% acid. When using weaker raw alk. solns. the feeding velocity can be considerably increased. The yield of alk. per cu. m. of carbonized wood amounted to 3.38 to 5.38 kg., depending on the quality of the wood, while that of oils derived from the lower plates of the rectifying tower was 0.93 kg. and that of the oil appearing on the surface after diln. was 1.27 kg. The total yield of these oils when operating with a weaker raw alk. was brought up to 2.32 kg. The condensate is recycled 3.7 times with a strong raw alk. and 2.1 times with the weak one. The de-alcoholized liquid was characterized by a higher acid content. The classification and application possibilities of the obtained oils (solvents) need further investigation. A. A. Bochtinsk

A. A. Borbittine

1st AND 2nd GROUPS										PROCESSES AND PROPERTIES INDEX										3rd AND 4th GROUPS									
<p>Influence of the ester content on the specific gravity of acetone-alcohol. V. P. Sumarokov. <i>Lesobim. Prom.</i> 4, No. 9, 18-19 (1937).—An expl. equation is given as the 1st approximation of the relationship between the percentage of esters and the sp. gr. of alc., <math>y = 0.824 + 0.0021 (x - 7.7)</math>, where <math>y</math> is sp. gr. of the acetone-alc. and <math>x</math> is ester content.</p> <p>A. A. Podgorny</p>																													
<p>ASD S.A. METALLURGICAL LITERATURE CLASSIFICATION</p>																													
10000 110 00100										11000 110 00100										12000 110 00100									
13000 110 00100										14000 110 00100										15000 110 00100									

CA

22

CONVERTING LIQUID DISTILLATES OBTAINED IN THE DRY DISTILLATION OF WOOD BY THE BRUNSTER-BADGER METHOD IN THE ASHA WOOD-CHEMISTRY PLANT. II. V. R. SUMAROKOV. *Leskhim. Prom.* 4, No. 12, 9-15 (1935); cf. C. A. 29, 8310<sup>8</sup>.—The sepn. of dild. and settled raw alc. and acetone-alc. in the Badger app. gives good results (improving the sepn. of acetone and MeOH), whereas that of undild. raw alc. yields products contaminated by high-boiling oils. Neutralization with Ca(OH)<sub>2</sub> gives satisfactory results, whereas sapon. of the esters contained in the raw alc. does not. The fractionation of the raw solvent and its washing water yields very different products. The raw allyl alc. fraction may yield a concd. alc. An industrial method of fractionation is given.

A. A. FULGONYI

ASAC-11A METALLURGICAL LITERATURE CLASSIFICATION

107000 81

101000 412 000 301

00101000

001000 030190

001000 001 000 101

PROCESS AND PROPERTIES INDEX																									
- 2																									
<p>Commercial production of pyrocatechol and pyrogallol from wood tars. V. P. Sumarokov and V. D. Uryumov. <i>Lesokhiz. Prom.</i> 3, No. 4, 20 3(1936); cf. C. A. 29, 8311P.—A commercial process must consist of (1) prepn. of cresote and (2) its treatment in autoclaves with HCl (6 1274). The scheme of the technological process and details of the app. are given. Eleven references. A. A. Podgorny</p>																									
<p>ASD-514 METALLURGICAL LITERATURE CLASSIFICATION</p>																									

Converting liquid distillates obtained in the dry distillation of wood by the Bruester-Badger method in the Asha wood-charring plant. III. V. A. Sumarokov. *Leskhim. Prom.* 5, No. 11, 4-11(1960); *Ch. C. A.* 30, 5022. Treatment of crude alc. in the 4-column continuous app. was investigated. Dila. of alc. entering the app. to 15-18° (Talle) promotes a better sep. of MeOH and Me<sub>2</sub>CO than dila. to 30° (Talle). To promote a better sep. of Me<sub>2</sub>CO from MeOH it is necessary to return the distillate from the condenser of the rectifying column to the purifying column, especially if the crude alc. contains much Me<sub>2</sub>CO. Loss of MeOH during the process is about 5%. The temp. regimen prescribed by the Badger Co. should be followed strictly. Sepn. is better in continuous than in batch distn. IV. V. P. Sumarokov and M. F. Saneikova. *Ibid.* No. 12, 18. A fractionation of "black acid" (crude acid obtained by distg. of Et<sub>2</sub>O from the soln. of AcOH) by the Bruester-Badger method was investigated. It is recommended that (1) intermediary and tail fractions should be refractionated, since second rectifying sep. better homologs from AcOH; (2) steam distn. of acids from acid tar effectively sep. volatile acids, but since the distillate contained also 30-35% of propionic acid, it was recommended to distil the acids in a vacuum without steam. Three references. A. A. Pulgarney

ASB-ELA DETAILING LITERATURE CLASSIFICATION



117 AND 120 00019		100 AND 4TH 00019	
PROCESS AND PROPERTIES INDEX			
<p>CA</p>		<p>10</p>	
<p>Preparation of pyrocatechol and other polyatomic phenols from the wood creosote fraction by demethylation of their ethers. V. P. Sazonchov and V. D. Ugryumov. <i>J. Applied Chem. (U.S.S.R.)</i> 9, 2222-22 (in French 2220) (1936).—Creosote (d<sub>4</sub> 1.0704, b. 200-20°, MeO 12%) was heated with 12% HCl, acid. with NaCl, in a sealed tube at 180° for 1-2 hrs. The resulting mixt., after removing the MeCl, was freed from monom. phenols, products of resinification and neutral oil by means of a C<sub>6</sub>H<sub>6</sub> extn., and the aq. acid soln. together with the NaCl washings of the C<sub>6</sub>H<sub>6</sub> ext. were extd. with ether, yielding 15.1% (recrystd.) pyrocatechol. Pyrogallol and methylpyrogallol were prepd. from a creosote b. 220-70°, yielding 26.2% of the mixt. of the above phenols, which were extd. from the acid layer with ether. To obtain a pure product, only pure phenol fractions of creosote should be used. Nine references.</p> <p style="text-align: right;">A. A. Pudgorov</p>			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION			
1000 157-83190		1000 00019	
1000 157-83190		1000 00019	

*car*

22

Preparation of crystals of polyhydric phenols from wood tar. V. P. Sumarokov and M. I. Stepanova. *J. Applied Chem. (U. S. S. R.)* 10, 1248-50 (in French 1250) (1937), cf. *C. A.* 31, 4058<sup>h</sup>.--The tar, obtained during the rectification of crude AcOH in the Brewster-Dager process, contains a considerable amt. of volatile oils and phenols whereas oils, steam distil. from tar, consist mainly of low-boiling phenols (b. below 230°). Cresote, sep'd from this tar by a fractional treatment with alkali, contains a considerable amt. of guaiacol and other methyl ethers of phenols and, therefore, is suitable for the prep'n of pyrocatechol, pyrogallol and methylpyrocatechol. Phenolic ethers in the cresote fraction were demethylated by treatment with 6-12% HCl in a bronze autoclave, protected with a Ag layer, at 180° and 13-17 atm. pressure for 1-2 hrs. Pyrocatechol was prep'd. from a cresote fraction b. 200-25° in a yield of about 15%. The residual cresote oil, after the prep'n. of pyrocatechol, can be utilized for the prep'n. of synthetic resin by condensation with formaldehyde. The cresote fraction b. 230-70° yielded crystals (32%), which were similar to tech. pyrogallol. The cresote fractions b. 80-177°, 177-86° and 180-80° yielded a cryst. methylpyrocatechol. Four references.

A. A. Volgorny

BC

13-1-2

Recovery of crystalline polyhydric phenols from extractive wood tar. V. P. SUMAROKOV and M. I. STYKANOVA (J. Appl. Chem. Russ., 1967, 40, 1266-1269).—The process of demethylation of cresols (M, with production of polyhydric phenols, described previously (cf. B., 1967, 564) may be performed in a solvent-free autoclave. A detailed description of the isolation of the individual phenols is given. R. T. 1

ASACLA METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

FROM SOURCE

RELATIONS

RELATIONS

RECEIVED AND PROPERTY INDEX		FILED AND RETURN	
<p><b>CA</b></p> <p>The maximum concentration of acetic acid obtained by extraction according to the method of Brister. A. N. Hink and V. P. Samoylov. <i>Leningrad. Zashch. Tr.</i>, No. 1, 1959; <i>Khim. Rebez. Zhur.</i> 2, No. 3, 124-126, 1959.</p> <p>In fractional extrn. with ether of AcOH from the tar containing liquid the first ext. (with a small amt of solvent) contains most of the impurities (phenols, aldehydes, ketones and the higher homologues of AcOH). A comparatively pure acid is obtained in the second ext. By this method on the Ashm plant was obtained an 84% acid. The diagram H<sub>2</sub>O-AcOH-Et<sub>2</sub>O indicates a max. concn. of 100% the acid in the ether soln in the presence of water. The observed higher concn. can be explained by the formation of the azeotropic mixt., ether-water. The azeotropic action increases with the decrease of the concn. of the acid in the ext. Increase the yield of the liquids in the extractor decreases the concn. of AcOH because of the formation of ether-water emulsions and of the soln of the acid. The use of hydrophobic solvent (pentane) is not recommended because, although it produces almost AcOH, too large an amt. of the solvent is necessary. It is recommended to use a solvent which, according to its hydrophobic properties, is intermediate between ether and pentane. Since the coeff. of distribution of the acid between such a solvent and water is smaller (as compared with ether and water) the amt. of the solvent must be increased. From the weak exts. obtained (low in water) it is possible to obtain 100% AcOH by distg off the solvent.</p> <p style="text-align: right;">W R Henn</p>		<p>100 AND 1TH GROUPS</p>	
<p>ASAC &amp; A METALLURGICAL LITERATURE CLASSIFICATION</p>		<p>100 AND 1TH GROUPS</p>	

2/

Phenols from waste products of acetic acid manufac-  
 ture V. P. Sumarokov and Z. M. Vokhshanskaya. *Is-  
 sohim. Pril.* 1939, No. 5, 29-32; *Khim. Referat. Zhur.*  
 1939, No. 12, 103.—From the oils in the decolorizer and  
 in the oil settlers were sepd., resp., 12.2 and 19.1% of  
 crude phenols on the wt. of the oils. By distn. in vacuo at  
 25 mm., a 100-120° fraction was obtained (which corre-  
 sponds to the 200-20° fraction at normal pressure) in amts.  
 equal to 40.9 and 44.2% of the crude phenol. The phe-  
 nols obtained belong mainly to the ethers of the pyrocate-  
 chol series and to the highest homologs of monohydric  
 phenol.  
 W. R. Henn.

ASD-51A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

21

The composition of the ester fraction of wood alcohol solvents. V. P. Samarkov and A. I. Zarakovskaya. *Lesn. Khim. Promst* 1939, No. 7, 31-5; *Khim. Refers. Zhur.* 1939, No. 12, 102. — The ester fraction of wood alcohol solvents is usually called methyl acetate. The solvents EDM, AMA and MATs contain, beside methyl acetate, methyl formate and methyl propionate. The content of methyl formate in EDM is up to 6% (in the other solvents it is 0.3-0.5%) and of methyl propionate 5.5% (in other solvents 1-2.6%). W. R. Henn

ASB-11A METALLURGICAL LITERATURE CLASSIFICATION

3RD AND 4TH ORDERS

**Removal of tar from hardwood-distillation products by the action of organic solvents.** I. V. P. Sumarokov and E. V. Klinskikh. *Lesokh. Prom.* 1940, No. 2, 34; *Khim. Referr. Zhur.* 1940, No. 8, 120.—Lab. expts. were made to compare various solvents for extg. tar and tar-forming substances from the condensate of dry distn. of wood. Criteria of effectiveness are a max. decrease in the content of phenols, furfuraldehyde and nonvolatile residue, and a min. decrease in the oxidizability and Br no. with a min. extn. of acid. Among benzene, butyl acetate, BuOH, dichloroethane, trichloroethylene, ethyl acetate, EtOH, gasoline, acetone oils, neutral tar oils, heavy tar oils and wood creosote, most effective were dichloroethane in a 1:1 ratio and ethyl acetate in a 0.5:1 ratio. Dichloroethane and ethyl acetate, resp., decreased phenol by 84 and 73, furfuraldehyde by 74 and 69, oxidizability by 67 and 70, Br no. by 55 and 24, and nonvolatile residue by 23 and 30%. Butyl acetate produced results similar to those of ethyl acetate. W. R. Mann

W. R. HARRIS

ASB-164 METALLURGICAL LITERATURE CLASSIFICATION

PROCESSING AND PROPERTY INDEX	
10	<p>Synthesis of pyrocatechol from wood crescents by cleavage of phenol ethers of crescents at atmospheric pressure. L. V. P. Samarkov, S. S. Ryklin and V. N. Bogoyavlenskaya. <i>J. Applied Chem. (U. S. S. R.)</i> 16, 219-26 (1943) (English summary).—The authors propose a process of pyrocatechol by demethylation of phenol ethers of wood crescents by <math>AlCl_3</math> or salts of aromatic amines. It was shown that <math>PhNH_2 \cdot HCl</math> at 160-70° is effective almost quantitatively in such ether cleavages; the reaction requires longer time than does aq. <math>HCl</math> in closed vessels; it requires relatively small amounts of <math>PhNH_2</math> and the sepn. of pyrocatechol is feasible by vacuum distn. of the reaction mixt. without sepn. from the <math>PhNH_2</math> salt, which can be recovered in the usual manner. G. M. K.</p>
<p>ASS. SLA METALLURGICAL LITERATURE CLASSIFICATION</p>	
<p>100000 11000000</p>	
<p>100000 11000000</p>	



1ST AND 2ND COLUMNS		PROCESSES AND PROPERTIES INDEX		3RD AND 4TH COLUMNS	
ca				21	
<p>Chemical reserves of the wood-distillation industry in the National war. V. P. Samarkov. <i>Leinaya Prom.</i> 1944, No. 10-11, p. 11. Review on chem. products of wood distn. G. M. Kozlov</p>					
ASS-11A METALLURGICAL LITERATURE CLASSIFICATION					
15000 SYMBOLS		150000 1ST 2ND 3RD 4TH		150000 1ST 2ND 3RD 4TH	
150000 1ST 2ND 3RD 4TH		150000 1ST 2ND 3RD 4TH		150000 1ST 2ND 3RD 4TH	

10

Synthesis of pyrenetechel from wood creosote by cleavage of phenol ethers of creosote at atmospheric pressure. II. V. P. Samarin, S. S. Rykhs, and E. E. Kurukleva. *J. Applied Chem. (U.S.S.R.)* 17, 522-6 (1944) (English summary); cf. *C.A.B.* 38, 1218. —It was shown that heating of wood creosote with  $AlCl_3$  up to  $230^\circ$  leads to an almost quantitative cleavage of the phenol ethers without the use of an autoclave. The amt. of  $AlCl_3$  needed is about 60%, i.e., approx. mol. per mol. ratio with the ether content. Decreased amts. of  $AlCl_3$  lead to sharply lower product yields and the latter contain increased amts. of  $MeO$  groups. The  $AlCl_3$  reaction is faster than the cleavage by  $PhNH_2 \cdot HCl$ . The recovered pyrenetechel is isolated by treatment of the mkt. with aq.  $HCl$  and  $H_2O$  extraction, followed by vacuum distn. (I. M. Kozlov)

23

Obtaining pyrocatechol from wood creosote through cleavage of creosote phenol ethers at atmospheric pressure. III. V. P. Samarin and V. N. Bogosavlenskiy. *J. Appl. Chem. (U.S.S.R.)* 17, 1219 (1944). English summary; cf. C.I. 38, 1219. It was shown that the cleavage rate of phenol creosote ethers under influence of  $\text{PhNH}_2$  and  $\text{HCl}$  doubles approx. for 20 temp. increase from 110-88°, this effect shrinks with rising temp. and becomes slight about 180°, at 110° the reaction is very slow. Increase of  $\text{PhNH}_2$  to 5% of creosote hinders the cleavage to a serious degree, while the use of 25-100% concn. leads to complete cleavage in almost the same time for practical purposes, 10-20%  $\text{PhNH}_2$  and 175-80° are recommended. Increased flow of  $\text{HCl}$  influences the cleavage rate but slightly.

G. M. Koshapoff

AND SEE METALLURGICAL LITERATURE CLASSIFICATION

Doc: ZARAKOVSKAYA, A. I., and KLINSKIY, N. V.

Sumarokov, V. P., Zarakovskaya, A. I., and Klinskiy, N. V.

"The determination of lower aliphatic alcohols in the presence of esters and other organic compounds by the Werner method", (report), Soobshch. o nauch. rabotakh chlenov Vsesoyuz. knim. o-va im. Mendeleeva, 1949, Issue 1, p. 18-19.

S.: K-1/30, 16 Sept. 53, (Letopis 'Zhurnal 'nykh Statey, No. 23, 1949).

CA

2

Distribution of methyl alcohol in some two-phase systems.  
V. P. Samoylov, and E. V. Klimskikh. *Zhur. Priklad. Khim.* (J. Applied Chem.) 22, 1067 (1949). The ratio  $r$  of the mol. concns. of MeOH distributed between H<sub>2</sub>O and Et<sub>2</sub>O, at 20°, starting from aq. solns. of 0.8, 1.6, 3.2, 6.4, 12.8, 19.2, 25.6 g. MeOH/100 ml., was detd. to be 10.5, 5.86, 3.20, 1.60, 0.80, 0.40, 0.20, resp. Between H<sub>2</sub>O and AcOEt, at 20°,  $r = 0.20, 0.40, 0.80, 1.60, 3.20, 6.40$ . Between H<sub>2</sub>O and AcOBu, at 20°, initial concn. of the aq. soln., 7.14, 9.78, 13.63, 21.31, 25.85 g. MeOH/100 ml.,  $r = 105.0, 86.5, 49.0, 21.2, 8.35$ . Significant extrn. of MeOH (i.e. extrn. beyond 10%) from H<sub>2</sub>O takes place, with Et<sub>2</sub>O, at a MeOH concn. not less than 1.6, with AcOEt at not less than 12.8, and with AcOH at not less than 25.8 g. MeOH/100 ml. Above these concns.  $r$  varies nearly linearly with the concn. of the initial aq. soln. N. Thon

CA

2

Distribution of acetic acid between water and some organic solvents. V. P. Romanov and E. V. Kiseleva. *Zhur. Priklad. Khim.* (J. Applied Chem.) 23, 641-6 (1950).—The distribution coeff.  $d = c_1/c_2$ , where  $c_1$  and  $c_2$  are the concns. of AcOH in  $H_2O$  and in the org. solvent, was detd. in 20-min. expts. at 25°. Results were the same when the eqg. period was kept longer, up to 1-2 hrs. With EtOAc as solvent, at the total concn.  $c = c_1 + c_2$  (practically equal to the initial concn. of AcOH in  $H_2O$ ) — 0.2, 1.0, 2.0, 3.0  $N$ ,  $d = 1.220, 1.180, 0.968, 0.968$ , i.e.  $d$  falls with increasing  $c$  up to about 2  $N$ , then remains const. With BuOAc,  $c = 0.2, 1.0, 2.0, 3.0$ ,  $d = 2.787, 2.420, 2.110, 1.811$ , i.e.  $d$  falls regularly with increasing  $c$ . With EtCO<sub>2</sub>Et,  $c = 0.2, 1.0, 2.0, 3.0$ ,  $d = 2.408, 2.080, 1.760, 1.524$ , i.e. falling. With PrCO<sub>2</sub>Et, at the same  $c$ ,  $d = 3.167, 2.660, 2.328, 1.988$ . Addn. of EtOH to EtOAc improves the org. capacity for AcOH from  $H_2O$  at least at lower  $c$ ; thus, with EtOAc 90% + EtOH 10%,  $c = 0.2, 1.0, 2.0, 3.0$ ,  $d = 1.041, 0.966, 0.901, 0.881$ . In order to secure a high org. solubility of the carb. EtOAc, it is necessary to free it as far as possible from esters of higher fatty acids. N. Tsou

Aug 52

USSR/Chemistry - Propionic Acid

"The Derivation of Pure Propionic Acid From the Waste Products of the Production of Acetic Acid From Wood," V. P. Sumarokov, Z. M. Volodutskaya, Gen Sci Res Inst of Wood Chem

"Zhur Prikl Khim" Vol 25, No 8, pp 860-866

The waste products resulting from the concn of wood acetic acid by the azeotropic method offer raw material contg a significant portion of propionic acid, which can be extracted therefrom in its pure form, the article states. The initial redistn of the waste products results in a clear sepm of propionic and acetic acids, both in concd form. The yield of acetic acid is about 52%, and that of propionic acid about 15% of the entire charge. According to the article, the best results, both in quality and yield of propionic acid, came from treatment with 1% H<sub>2</sub>SO<sub>4</sub>, followed by redian. Beechwood was distd to obtain the acids.

PA 226710

226710

SUMAROKOV, V. P.

SUMAROKOV, Y.P.; TULYAKOV, B.V., redaktor; AGAPOV, F.F., tekhnicheskiy  
redaktor

[Chemistry and the technology of processing wood tars] Khimiia i  
tekhnologiya pererabotki drevesnykh smol. Moskva, Goslesbumisdat,  
1953. 234 p. (MLRA 7:9)  
(Wood tar)



SEKAROV, V. P. ; VOLADUISKAYA, Z. M.

Wood Distillation

Extracting propionic acid, Der. i lesokhim. prom. 1 No. 7, 1953

Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

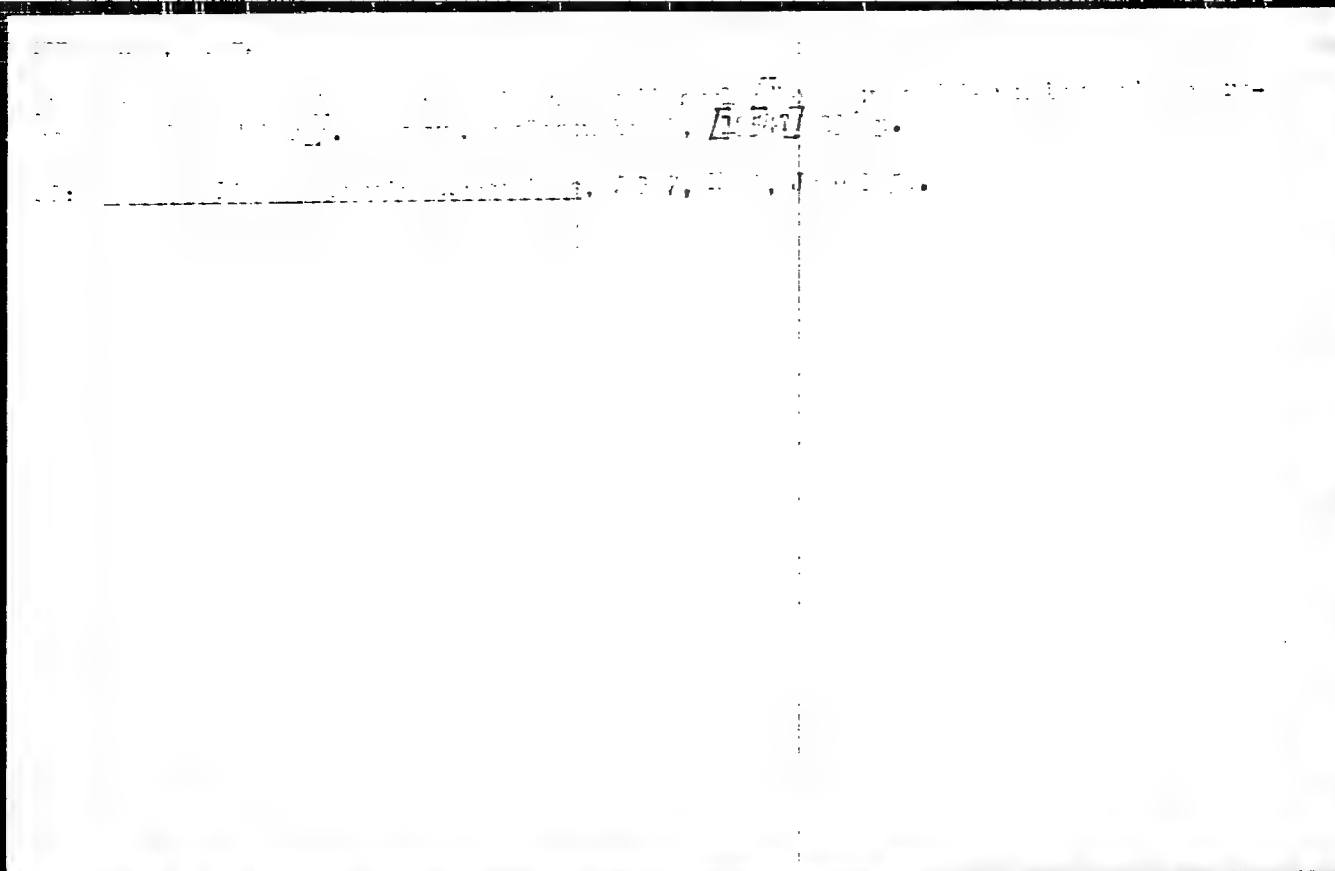
SUMAROKOV, V.P.; VOLODUTSKAYA, Z.M.

Use of beech-wood distillation products as entrainer in the fortification  
of acetic acid. Derevoprosrabsatyvayushchaya i Lesokhim. Prom. 2, No.2,  
12-15 '53. (MLRA 6:2)  
(CA 47 no.19:10225 '53)

SUMAROKOV, V.P.; VOLODUTSKAYA, Z.H.

Extracting acetic acid from undistilled pyroligneous distillate. Der.1  
lesokhim. prom. 2 no.8:12-15 Ag '53. (MLRA 6:7)

1. TSentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut.  
(Acetic acid) (Wood distillation)



SUMAROKOV, V.P.; VOLODUTSKAYA, Z.M.

Extraction of industrial furfural from furfural oils obtained by  
wood pyrolysis. Der. i lesokhim. prom. 3 no.2:10-12 F '54. (MLRA 7:1)

1. TSNILKHI.

(Furfural)

SUMAROKOV, V.P., kandidat tekhnicheskikh nauk; CHISTOV, I.F.

About the textbook "technology of wood chemistry production."  
Der. i lesokhim.prom. 3 no.7:30 J1 '54. (MLRA 7:7)

1. Nauchnoyy sotrudnik Tsentral'nogo nauchno-issledovatel'skogo lesokhimicheskogo instituta (for Chistov)  
(Wood—Chemistry)

Сумароков, Л. П.

USSR

Concentration of acetic acid under partial vacuum by means of butyl acetate. Z. M. Velodutskaya, B. V. Gerasimov, and N. I. Likhacheva. *Dokl. Akad. Nauk SSSR*, No. 8, 13-18 (1984). — Up to 92% of AcOH (in concn. of 75-85%) can be recovered from 85% aq. AcOH in a 23-plate bell-type column by azeotropic distn. with AcOBu. The concn. of the product is increased by increasing the temp. in the lower part of the column. H<sub>2</sub>O removed contained 0.04-0.4% AcOH, and the concd. AcOH contained 1 to 5% AcOBu; this can be removed by distn. (cf. Othmer, C.A. 35, 5858).

Elizabeth Barabash

SUMAROKOV, V.P.; BORISOV, P.D.; VOLODUTSKAYA, Z.M.; GORCHAKOVA, Ye.V.,  
SIVILLOVA, N.I.

Fortifying acetic acid by using butyl acetate under pilot plant  
conditions. Der. 1 lesokhim.prom. 3 no.8:19-20 Ag '54.(MIRA 7:8)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut.  
(Acetic acid)



✓ Improving the quality of methyl acetone from the destructive distillation of wood. V. P. Samarkov and Z. M. Volodutskaia. *Doklady Akad. Nauk SSSR* 1934, 10-12(1934).

From 3, No. 11, 10-12(1934).—Of methyl acetone contg. 29.6% esters (as MeOAc), 39.6% ketones (as Me<sub>2</sub>CO), 22.62% MeOH, and 6.46% aldehydes (as AcH), and having acid no. 0.42, Br no. 2.79, and d<sub>4</sub> 0.8644, 10% b. below 52°, 50% b. below 54°, and 90% b. below 75°. Fractions b. 21-50° (13.8%) and 50-62° (62.4%) had d<sub>4</sub> 0.8592 and 0.8453, acid no. 5.73 and 0.06, and contained ketones 54.0 and 36.5%, esters 37.3 and 34.5%, and aldehydes 10.3 and 6.41%; 11.1, 1.6, and 6.8% of the original ketones, esters, and aldehydes were present in the still bottoms, and 12.3, 8.0, and 9.4% were lost. Methyl acetone was refluxed 1 hr. with 5% H<sub>2</sub>SO<sub>4</sub> and sepd. into fractions, b. 41-50° (7.1%), b. 50-62° (53.8%), and b. 62-9° (10.2%), having d<sub>4</sub> 0.8776, 0.8442, and 0.8343; acid no. 0.47, 0.24, and 29.0, and contg. 47.5, 42.7, and 31.5% ketones, 40.9, 36.8, and 8.2% esters, and 4.75, 4.1, and 0.17% aldehydes; the total losses of ketones, esters, and aldehydes (in the still bottoms and unaccounted for) were 22.1, 25.3, and 68.4%, resp. A mixt. of 688 g. of methyl acetone, 593 g. 98% HOAc, and 8 g. 72% H<sub>2</sub>SO<sub>4</sub> was refluxed 1 hr., and the esterified mixt. sepd. into 3 fractions, b. 42-5° (35.0 g.), b. 50-62° (269 g.), and b. 62-9° (50.5 g.), d<sub>4</sub> 0.8752, 0.8924, and 0.8652, acid no. 13.70, 3.46, and 16.6, and contg. 35.4, 28.9, and 55.1% ketones, 55.2, 66.5, and 14.1% esters, and 3.15, 1.40, and 0.04% aldehydes; the losses of ketones and aldehydes were 13.4 and 79.3%, resp.

John Lake Keays

✓ Characterization of the organic part of industrial waste  
liquor from plants for dry-distillation of wood. V. P.  
Sumarokov and M. O. Pechanova. J. Appl. Chem.  
U.S.S.R. 27, 617-21 (1954) (Engl. translation).—See C.A.  
48, 11754f. R. M. B.

①

SUMAROKOV, V.P.; PERSHANOVA, M.G.

Properties of the organic part of industrial wastes from plants  
for the dry distillation of wood. Zhur.prikl.khim. 27 no.6:656-  
661 Je '54. (MIRA 7:8)

1. TSentral'nyy Nauchno-issledovatel'skiy lesokhimicheskiy insti-  
tut.  
(Factory and trade waste) (Wood distillation)

SUMAROKOV, V.P., kandidat tekhnicheskikh nauk

Rapid method of charcoal quenching. Gidroliz. i lesokhim prom.  
8 no.2:30 '55. (MLRA 8:10)

(Charcoal)

SUMAROKOV, V.P.

Oils distilled from wood alcohol and their use. Gidroliz. i  
lesokhim. prom. 8 no.3:6-8 '55. (MLRA 8:9)

1. TSentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy insti-  
tut.

(Essences and essential oils) (Wood alcohol)

SUMARGOV, Viktor Pavlovich; GORDON, Lev Vladimirovich; PLATUNOV, N.A.,  
retsensent; CHASHCHIN, A.M., retsensent; SNESAREV, K.A., redaktor;  
FEDOROV, B.M., redaktor izdatel'stva; KARASIK, N.P., tekhnicheskii  
redaktor

[Chemical and technical control in wood pulp production] Khimiko-  
tekhnicheskii kontrol' isokhimicheskikh proizvodstv. Moskva,  
Goslesbumizdat, 1956. 257 p. (MLRA 10:4)  
(Woodpulp industry)

"APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653910019-6

STANDARD FORM NO. 64

APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653910019-6"

*Sumarokov, V. P.*

USSR/Physical Chemistry. Thermodynamics. Thermochemistry. B-8  
Equilibria, Physical-Chemical Analysis, Phase Transitions.

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 14713

Author : V. P. Sumarokov, Z. M. Volodutskaya

Inst : -

Title : To the Characteristic of the Binary System Acetic Acid -  
Propionic Acid

Orig Pub: Zh. prikl. khimii, 1956, 29, No 5, 738-743

Abstract: The density (20°), refraction index (20°), viscosity (20 and 50°) and equilibrium composition of the liquid and vapor phases of the binary system  $\text{CH}_3\text{COOH} - \text{C}_2\text{H}_5\text{COOH}$  were studied. The curves plotted according to the experimental data show that this system is close to an ideal one; these curves have no maximum or minimum points, their curvature is very slight (especially that of the refraction index). The obtained data can be used for the determination of propionic acid contents in its mixture with acetic acid at the industrial checking of the

Card 1/2



USSR Physical Chemistry. Thermodynamics, Thermochemistry, B-8  
Equilibria, Physical-Chemical Analysis, Phase Transitions.

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 14713

Abstract: process of separation of these acids, as well as for  
the computation of the number of plates of rectification  
columns.

Card 2/2

**"APPROVED FOR RELEASE: 08/26/2000**

**CIA-RDP86-00513R001653910019-6**

**APPROVED FOR RELEASE: 08/26/2000**

**CIA-RDP86-00513R001653910019-6"**

SUMAROKOV, V.P.; VOLODUTSKAYA, Z.M.

Liquid - vapor equilibrium in the system acetic acid - ethyl acetate. *Gidroliz. i lesokhim. prom.* 10 no.6:12-13 '57. (MIRA 10:12)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut.  
(Acetic acid) (Ethyl acetate) (Phase rule and equilibrium)

SUMAROKOV, V.P.

Fundamental results of the study of the composition and utilization of tars from the pyrolysis and gasification of wood. *Gidroliz. i lesokhim. prom.* 10 no.7:21-24 '57. (MIRA 10:12)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut.  
(Wood tar)

SUMAROKOV, V.P.

Investigations of the Central Wood-Chemical Scientific Research Institute in the field of the production of acetic acid from wood (1932-1957). Sbor.trud. TSNILEKHI no.12:13-25 '57. (MIRA 13:10)  
(Acetic acid) (Wood--Chemistry)

SUMAROKOV, V.P.

Studies in the separation of pyrocatechol from wood tars. Sbor. trud.  
TSNIIKHI no.12:86-103 '57. (MIRA 13:10)  
(Pyrocatechol) (Wood tar)

SUMAROKOV, V.P.; VOLODUTSKAYA, Z.M.

Separating concentrated propionic acid crude pyrokigneous  
acid. Gidroliz. i lesokhim. prom. 11 no.1:19-20 '58.

(MIRA 11:2)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut.  
(Propionic acid) (Pyroligneous acid)

SUMAROKOV, V.P.; VOLODUTSKAYA, Z.M.

Using pulsation for the recovery of acetic acid from the distillates  
of wood pyrolysis. Gidroliz. i lesokhim.prom. 11 no.8:6-8  
' 58. (MIRA 11:12)

1. TSentral'nyy nauchno-issledovatel'skiy lesokhimicheskii institut.  
(Wood distillation) (Acetic acid)



SUMAROKOV, Viktor Pavlovich; TERENT'YEVA, Valentina Vasil'yevna; GORDON,  
L.V., red.; BRATISHKO, L.V., tekhn.red.

[Waste water of the woodpulp industry and their purification]  
Stochnye vody lesokhimicheskikh predpriyatii i ikh oshistka.  
Khimki, TSentr.nauchno-issl.lesokhim.in-t, 1959. 27 p.  
(MIRA 13:12)

(Sewage--Purification)

(Woodpulp industry)

SUMAROKOV, V.P.; VOLODUTSKAYA, Z.M.

Accuracy of different procedure for determining the content of the  
ester in industrial ethyl acetate. Gidroliz. i lesokhim prom. 12  
no.7:12-13 '59 (MIRA 13:3)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut.  
(Ethyl acetate)

SUMAROKOV, V.P., kand.tekhn.nauk; TERENT'YEVA, V.V., inzh.

Purification of sewage waters in wood chemicals enterprises.  
[Trudy] NTO bum.i der.prom. no.8:278-298 '59. (MIRA 16:2)  
(Sewage--Purification) (Chemical industries)

SUMAROKOV, Y. P.; GUSAKOV, V. N.; KURDYUMOV, V. A.; VOLODUTSKAYA, Z. M.

Extraction of acetic acid by wood-tar oils from vapor and gas  
products obtained in a vertical gas-circulating retort. Sbor.  
trud. TSNILKHI no.13:46-59 '59. (MIRA 13:10)  
(Acetic acid) (Wood—Chemistry)

ALFEROVA, L.A., kand.tekhn.nauk; SUMAROKOV, V.P., kand.tekhn.nauk; EL'KIN, D.I.,  
kand.ekon.nauk

Recovery of low-molecular acids  $C_1-C_4$  from the wastes of synthetic  
fatty acid manufacture. Masl.shif.prom. 25 no.1:28-31 '59.  
(MIRA 12:1)

1. Tsentral'nyy nauchno-issledovatel'skiy lesotekhnicheskiy  
institut.

(Acids)

SUMAROKOV, Viktor Pavlovich; VOLODUTSKAYA, Zinaida Mikhaylovna; VYSOTSKAYA, Varvara Afanas'yevna; KLINSKIKH, Yevgeniya Vasil'yevna; KHOVANSKAYA, A.P., red.; VOLOKHONSKAYA, L.V., red. 1zd-vs; BACHURINA, A.M., red. teKhk.red.

[Methods for the analysis of products of pyrogenic wood processing]  
Metody analiza produktov pirogeneticheskoi pererabotki drevesiny.  
Moskva, Goslesbumizdat, 1960. 251 p. (MIRA 14:1)

1. TSentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut  
(for Sumarokov, Volodutskaya, Vysotskaya, Klinskikh).  
(Wood--Chemistry)

SUMAROKOV, Y.P.; VOLODUTSKAYA, Z.M.

Selective extraction of furfural from aqueous distillates of wood  
pyrolysis. *Gidroliz. i lesokhim. prom.* 13 no.5:7-9 '60.

(MIRA 13:7)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy  
institut.

(Furaldehyde)

(Wood distillation)

SNESAREV, Kirill Andreyevich; ZARAKOVSKAYA, Anna Iosifovna; VOROB'YEVA,  
Mariya Trofimovna; SUMAROKOV, V.P., red.; IOFINOVA, TS.B., red.  
izd-va; PARAKHINA, N.L., tekhn.red.

[Metrological principles of the analytical control of chemical  
industries] Metrologicheskie osnovy analiticheskogo kontrolya  
khimicheskikh proizvodstv. Moskva, Goslesbumizdat, 1960. 205 p.  
(MIRA 13:9)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy insti-  
tut (for Sumarokov).

(Chemistry, Analytic--Quantitative)



s/080/60/033/04/27/045

AUTHORS: Sumarokov, V.P., Volodutskaya, Z.M.

TITLE: On the Distribution of Furfurol<sup>1</sup> Between Water and Some Organic Solvents

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 4, pp 910 - 914

TEXT: The distribution of furfurole in two-phase systems of water and an organic solvent was investigated for various furfurole concentrations. Diisopropyl ether, diethyl ether, benzene and ethyl acetate were used as solvents. The furfurole concentration varied from 6 to 72 g/l of the initial aqueous solution. The equilibrium concentrations for all systems investigated are represented by steeply ascending curves. The distribution coefficients are not constant values, but increase with the furfurole concentration in the initial aqueous solution. The sharpest changes in distribution were observed in the ethyl acetate-water system and at low concentrations (up to 0.5 g-mol/l.) It was shown that for extracting furfurole from aqueous solutions by the solvents tested only a small number of theoretical stages is needed. The lowest extractor height is needed in the case of ethyl acetate, the greatest with diisopropyl ether, the

Card 1/2

S/080/6C/033/04/27/045

On the Distribution of Furfurole Between Water and Some Organic Solvents

other solvents hold intermediate positions.

There are: 2 graphs, 1 table and 3 references, 1 of which is Soviet, 1 English and 1 Canadian. ✓

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut (Central Scientific Research Wood-Chemical Institute)

SUBMITTED: October 21, 1959

Card 2/2

KORYAKIN, V.I., kand. tekhn. nauk; DOROGUTIN, B.S.; CHISTOV, I.F.;  
CHEKREPANOVA, I.V.; DAVYDOVA, M.I.; SOROKOLETOVA, R.I.;  
MIKHEYEVA, L.V.; ~~SEYANAGEY~~, V.G.; VOLKOVA, L.N.; SUMAROKOV, V.P.,  
kand.tekhn. nauk, red.; KUZNETSOV, G.A., red.; ZAYTSEVA, L.A.,  
tekhn. red.

[Technology of the production of wood chemicals; a manual for  
foremen, technicians, and engineers] Tekhnologiya proizvod-  
stva lesokhimicheskikh produktov; posobie dlia masterov i in-  
zhnerno-tekhnicheskikh rabotnikov. Moskva, Gos.izd-vo mest-  
noi promyshl. i khidozh. promyslov RSFSR, 1961. 383 p.  
(MIRA 15:3)

(Wood—Chemistry)

SUMAROKOV, V.P.

It is time to review the standards for wood alcohol solvents.  
Gidroliz. i lesokhim.prom. 14 no.3:8-9 '61. (MIRA 14:4)  
(Methanol) (Solvents)

SUMAROKOV, V.P.

The life and work of Professor Leonid Petrovich Zharebov. Sbor.  
trud.TSNILKHI no.14:3-7 '61. (MIRA 16:4)  
(Zharebov, Leonid Petrovich, 1863-1958)

SUMAROKOV, V.P.; KLINSKIKH, Ye.V.

Thermal stability of wood tar oils extracted from the tar of  
softwood species. Sbor.trud.TSNILKHI no.14:53-59 '61.

(MIRA 16:4)

(Tar oils--Testing)

(Wood distillation)

SUMAROKOV, V.P.; VOLODUTSKAYA, Z.M.

Effect of technology of production on the composition of black  
acetic acid. Gidroliz. i lesokhim. prom. 14 no.5:6-8 '61.

(MIRA 16:7)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy  
institut.

(Acetic acid)

SUMAROKOV, V.P.; VOLODUTSKAYA, Z.M.

Using organic solvents for the extraction of low molecular weight fatty acids  $C_{1-10}$  from acid sewage wastes from the manufacture of synthetic fatty acids and fatty alcohols.  
Sbor.trud.TSNILKHI no.14:74-84 '61. (MIRA 16:4)  
(Acids, Fatty) (Industrial wastes)



SUMAROKOV, V.P.; VOLODUTSKAYA, Z.M.

Complex esterification of tall oil acids with methyl alcohol.  
Gidroliz.i lesokhim.prom. 15 no.8:12-14 '62. (MIRA 15:12)

1. Nauchno-issledovatel'skiy tekhnokhimicheskiy institut.  
(Esterification) (Methyl alcohol)

FRLOV, Gennadiy Matveyevich; SUMARKOV, V.P., red.; FILIMONOVA,  
A.I., red.izd-va; GRECHISHCHEVA, V.I., tekhn. red.

[Acetic acid, its production and rectification] Uksusnaia  
kislota, ee proizvodstvo i rektifikatsiia. <sup>1</sup>zd.2,, perer.  
Moskva, Goslesbumizdat, 1963. 209 p. (MIRA 17<sup>1</sup>3)

SUMAROKOV, V.P.; VOLODUTSKAYA, Z.M.

Complex esterification of tall-oil acids with n-butyl alcohol.  
Gidroliz. i lesokhim. prom. 16 no.4:7-9 '63. (MIRA 16:7)

1. Nauchno-issledovatel'skiy tekhnokhimicheskiy institut.  
(Esterification) (Tall oil)

SUMAROKOV, V.P.

Leonid Petrovich Zharebkov and his work on wood chemistry and  
chemical technology. Zhur.prikl.khim. 36 no.6:1372-1373 Ja  
'63. (MIRA 16:8)  
(Zharebkov, Leonid Petrovich, 1863-1958) (Wood—Chemistry)